Precalculus Final Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Questions 1 – 5 refer to the function:

1. Find the value(s) of x for which f(x) = 0

2. Describe the horizontal asymptote for the graph of f(x).

3. Describe the vertical asymptote(s) of f(x).

4. Describe the domain of f(x).

5. Describe the end behavior of f(x).

6. Name all values of x which are not in the domain of

7. Over the set of complex numbers, has, at most, how many roots?

8. List all possible rational zeros of:

For questions 9-11 compare the following:

9. Compared to f(x) the graph of g(x) would be translated how?

10. Compared to f(x) the graph of h(x) would be translated how?

11. Compared to f(x) the graph of j(x) would be translated how?

12. Find the value of to the nearest thousandth.

13. Solve for x: to the nearest thousandth.

14. Solve for x:

15. Evaluate to the nearest thousandth.

16. Evaluate

17. Evaluate

18. Use the change of base formula to find

19. Write as a single logarithm.

20. Patty contributes to a savings account paying 7.5% compounded monthly. What should her monthly payments be if she wants to accumulate $35,000 in 10 years?

21. A cup of coffee cooled from 96˚C to 65˚C after 8 min in a room at 20˚C. When will it cool to 25˚C. Newton’s Law of Cooling states .

22. At the end of each quarter year, Derek makes a $500 payment into a mutual fund. If his investments earn 7.88% annual interest compounded quarterly, what will be the value of Derek’s annuity in 20 years?

Use what you know about the unit circle to answer 23 – 27.

23. sin 30˚

24. cos 60˚

25. sin

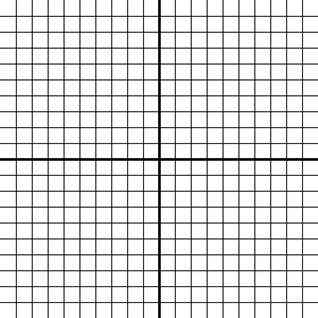
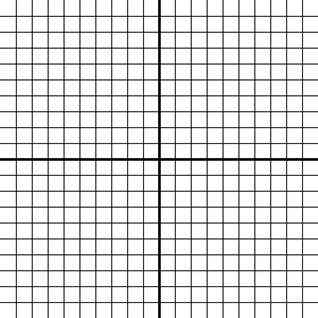
26. cos

27. cos θ = find 2 solutions for θ.

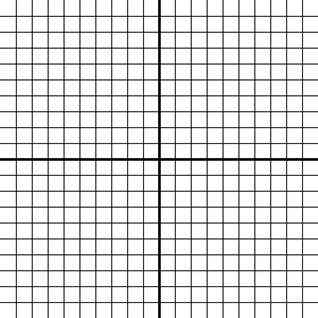
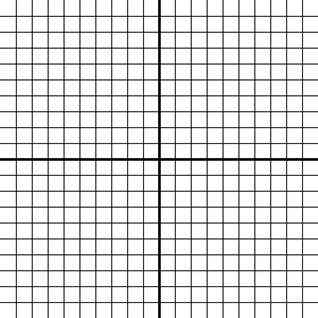
Hand in this test to get the non-calculator portion.

**Sketch the graphs of the following: Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

28. 29.

30. 31.

32. 33.

